

DESCRIPTION

Micro-Lok® HP Ultra fiberglass pipe insulation is a high-performance pipe insulation with a polypropylene-coated factory-applied vapor-barrier jacket. Micro-Lok HP Ultra is made from biosoluble glass fibers bonded with a thermosetting resin and produced in 36" (0.92 m) lengths and is used to insulate standard iron pipe, plastic pipe and copper tubing. The polypropylene-coated jacket includes a longitudinal, self-sealing closure lap and matching butt strip. The jacket system is adhered to each fiberglass section using a specially formulated adhesive to ensure jacket securement.

The factory-installed tape system permits installation at ambient temperatures down to 20°F (-7°C) and will not soften or separate when exposed to high ambient temperatures and humidity.

USES

Micro-Lok HP Ultra fiberglass pipe insulation is suitable for installation over hot, cold, concealed and exposed piping systems with operating temperatures up to 850°F (454°C). Weather-protective jacketing is required for outdoor applications. Pipe operating below ambient temperature requires all joints to be sealed with factory-applied, self-seal lap and butt strips. Micro-Lok HP Ultra is UL listed and labeled over plastic pipes for air plenum applications when used at 1.0" thickness or greater.

The jacketed insulation can also resist temporary exposure to small amounts of liquid water as long as the exposed fiberglass ends have been vapor-sealed. This may potentially allow contractors to install the insulation earlier on a jobsite – before the building envelope has been enclosed. Micro-Lok HP Ultra's jacket is cleanable by wiping it down using a soft, damp cloth. Micro-Lok HP Ultra is intended for indoor use. Outdoor use of Micro-Lok HP Ultra requires separate weather protection.

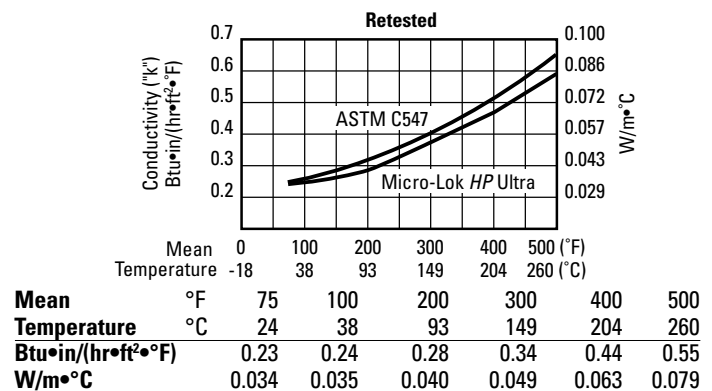
PHYSICAL PROPERTIES

Service Temp. Range (ASTM C411)	0°F to 850°F (-18°C to 454°C)
Moisture Sorption	<5% by weight
Corrosivity (ASTM C1617)	<5 ppm chloride standard
Shrinkage (ASTM C356)	None
Microbial Growth (ASTM C1338)	Does not promote microbial growth
Surface Burning Characteristics	Composite FHC 25/50 per ASTM E84, NFPA 255, CAN/ULC S102.2
Limited Combustibility	NFPA 90A and 90B
Jacketing (Poly ASJ)	ASTM C1136 (Type I, II, VII, & X)
Water Vapor Permeance (ASTM E96 – Procedure A)	0.01 perms max.
Bursting Strength (ASTM D774)	100 psi (8.7 kg/cm ²)
Tensile Strength (ASTM D828)	75 lbs./in. (13.1 N/mm) width min. (MD) 60 lbs./in. (10.5 N/mm) width min. (CD)

SPECIFICATION COMPLIANCE

- ASTM C547 Type I (Replaced HH-I-558B, Form D, Type III, Class 12, Class 13 up to 850°F (454°C))
- ASTM C585 – Dimension Standard for pipe ID only
- ASTM C1136 (Jacketing) (Replaces HH-B-100B, Type I & II)
- MIL-DTL-32585 Type 1, Form 4, Facing A ([unjacketed only](#))
- MIL-I-22344D, MIL-PRF-22344E
- Coast Guard/IMO Approved 164.109/56/0 (plain, unjacketed only – excluding 7/8 x 1/2 [22 mm x 13 mm], 1/2 x 1/2 [13 mm x 13 mm])
- Bureau of Household Goods and Services CA-T1039 (CO)
- Firestop Assemblies: Meets requirement for jacketed fiberglass pipe insulation product at or above 3.5 pcf.
- ASTM E84, CAN/UL-S102.2 – 25/50 listed and labeled Intertek testing laboratories, listed and labeled Underwriter Laboratories
- ASTM D2863 – Limiting Oxygen Index (LOI) minimum 31
- NRC 1.36, ASTM C795, MIL-I-24244C, MIL-DTL-24244D*

*When ordering material to comply with ASTM C795, NRC 1.36 & MIL-I-24244 a statement of that fact must appear on the purchase order. Specific lot testing will be conducted and a certification of compliance can be provided.


THERMAL CONDUCTIVITY ("K") *


*Apparent thermal conductivity values are determined by applying procedures dictated per ASTM C1045 on test data obtained using ASTM Test Method C335. All values are based on nominal manufacturing and testing parameters, are subject to normal variation, and are not guaranteed for specification purposes or otherwise.

SUSTAINABLE BUILDING ATTRIBUTES

Manufacturing Location	Defiance, Ohio (43512)	
Recycled Content (glass only)	41%	
Recycled Content (total product)	28%	
Volatile Organic Compounds (ASTM D5116)	Total	0.15 g/l
(Analysis ASTM D6196 & ASTM D5197)		
Fiberglass Pipe Insulation	Formaldehyde	0.009 ppm
	Aldehydes	0.009 ppm
Volatile Organic Compounds (Calculated)	Total	<49 g/l
Self-Sealing Lap & Butt Strips		

SUSTAINABLE BUILDING CERTIFICATIONS

GREENGUARD®	Certified
GREENGUARD® GOLD	Certified
LEED® Credits	To see LEED info call technical support.
LEED-NC	



MICRO-LOK® HP ULTRA

HIGH-PERFORMANCE FIBERGLASS PIPE INSULATION

DATA SHEET

SIZE AVAILABILITY

Insulation Thickness		Iron Pipe Size Range		Copper Tubing Size Range	
in.	mm	in.	mm	in.	mm
½	13	½–6	13–152	⅝–4⅞ [§]	16–105
1	25	½–24	13–610	⅝–6⅞	16–156
1½	38	½–24	13–610	⅝–6⅞	16–156
2	51	½–24	13–610	1⅞–6⅞	29–156
2½	64	1–24	25–610	1⅞–6⅞	35–156
3	76	1–24	25–610	1⅞–6⅞	35–156
3½	89	1½–24*	38–610	–	–
4	102	3–24**	76–610	–	–
4½	114	3–24†	76–610	–	–
5	127	3–20††	76–508	–	–

Notes:

*2½" and 23" IPS not available in this insulation thickness.

**22" and 23" IPS not available in this insulation thickness.

†21", 22" and 23" IPS not available in this insulation thickness.

††19" IPS not available in this insulation thickness.

§3⅝" CTS not available in this insulation thickness.

ACOUSTIC - INSERTION LOSS

Insertion loss data for Johns Manville pipe insulation acoustic treatments tested per ASTM E1222

Frequency	1-in Micro-Lok HP Ultra	1-in Micro-Lok HP Ultra with Zeston PVC (20 mil)	1-in Micro-Lok HP Ultra with MLV (1 psf)	2-in Micro-Lok HP Ultra	2-in Micro-Lok HP Ultra with Zeston PVC (20 mil)	2-in Micro-Lok HP Ultra with MLV (1 psf)
Hz	dB	dB	dB	dB	dB	dB
315	2	1	10	1	0	12
400	2	4	13	0	8	17
500	3	5	14	1	10	19
630	5	11	21	6	14	21
800	7	13	20	8	15	22
1000	9	19	25	13	20	29
1250	10	20	28	14	22	31
1600	13	24	33	17	26	37
2000	15	27	35	20	29	39
2500	17	29	36	21	30	38
3150	19	30	36	23	32	40
4000	20	29	36	26	34	41
5000	22	30	36	29	34	38

ACOUSTIC - TRANSMISSION LOSS

Transmission loss data and sound transmission class (STC) for Johns Manville pipe insulation acoustic treatments tested per ASTM E90

Frequency	1-in Micro-Lok HP Ultra	1-in Micro-Lok HP Ultra with Zeston PVC (20 mil)	1-in Micro-Lok HP Ultra with MLV (1 psf)	2-in Micro-Lok HP Ultra	2-in Micro-Lok HP Ultra with Zeston PVC (20 mil)	2-in Micro-Lok HP Ultra with MLV (1 psf)
Hz	dB	dB	dB	dB	dB	dB
125	4	7	15	6	8	15
250	4	7	18	6	8	20
500	4	11	23	7	15	29
1000	7	19	32	12	25	38
2000	14	25	38	20	32	45
4000	21	29	44	30	38	51
STC	8	16	28	12	19	31

In lab tests Johns Manville Ultra jacketing performed similarly to ASJ jacketing.

QUALIFICATIONS FOR USE

A sufficient thickness of insulation must be used to keep the maximum surface temperature of Micro-Lok *HP Ultra* below 150°F (66°C). In addition, at operating temperatures above 500°F (260°C), Micro-Lok *HP Ultra* pipe insulation must be applied in a thickness ranging from 2" (51 mm) minimum to 6" (152 mm) maximum.

During initial heat-up to operating temperatures above 350°F (177°C), an acrid odor and some smoke may be given off as the organic binders used in the fiberglass pipe insulation begin to decompose. When this occurs, caution should be exercised to ventilate the area well. This loss of binder does not directly affect the thermal performance of the pipe insulation, but the compressive strength and resiliency of the product are reduced. For applications with excessive physical abuse or vibration at high temperatures, consult your local Insulation Systems Market Development Manager for alternate material recommendations.

CHILLED WATER SYSTEMS

For chilled water systems, see [3-Part Specification, Mech-261](#).

APPLICATION RECOMMENDATIONS***Micro-Lok *HP Ultra* Pipe Insulation and Butt Strips**

1. Do not apply Micro-Lok *HP Ultra* if air temperature is below 20°F (-7°C) or above 130°F (54°C) due to the effect of temperature on tape performance. We recommend stapling when application falls outside this temperature range.

When stapling, we recommend mastic be applied over staples to prevent moisture penetration.

2. If stored below 20°F (-7°C) or above 130°F (54°C), insulation cartons should stand within the recommended temperature range for 24 hours prior to application.
3. Once release paper is removed, both adhesive and lap must be kept free of dirt and water, and the lap sealed immediately.
4. When adhered, the lap and butt strips must be pressurized by rubbing firmly with a plastic squeegee or the back of a knife blade to ensure positive closure.
5. Do not reseal the lap or butt strip once applied. This could compromise the quality of the sealed jacket system.

*For complete application recommendations and installation instructions, see [MECH-261 InsulSpec Specifications](#).

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Technical specifications as shown in this literature are intended to be used as general guidelines only. Please refer to the Safety Data Sheet and product label prior to using this product. The physical and chemical properties of Micro-Lok *HP Ultra* listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Any references to numerical flame spread or smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with your customer service representative for current information.

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